DOW CHEMICAL U.S.A.

May 20, 1981

MICHIGAN DIVISION
MIDLAND, MICHIGAN 48640

Mr. Larry Thornton
Resource Recovery Division
Department of Natural Resources
P.O. Box 128
Roscommon, MI 48653

Dear Mr. Thornton:

SUBJECT: POSEYVILLE LANDFILL CLOSURE

As discussed with you on 4/30/81, I am providing as-built drawings of the leachate collection system for the north, west and south sides of the Landfill. The flow rate from the north sump has been measured at approximately 50 gpm and the south sump at approximately 70 gpm. Leachate analysis has been measured as follows:

	ppm
Chloride	9,940
TOD	1,320
TOC	680
pH	7.5

Leachate organic analysis have identified and confirmed the presence of six organics at less than 10 ppm for each constituent. A more extensive evaluation would be necessary to determine the key compounds. Inorganic analysis for brine chemical levels have been performed and are consistent with the brine and inorganic chemical residues disposed at the site.

Landfill materials have consisted of SARAN®, plastic materials, demolition debris, rubbish, latex, METHOCEL®, waste treatment sludges, fly-ash and cinders, ETHOCEL®, incinerator ash, SEPARAN®, asbestos, spill yard clean-up solids, FDA products (METHOCEL®, salicylic acid, and ETHOCEL®) and inorganic residues. A further discussion of these materials is enclosed. Drawings showing the final grades and contour of the site will be forwarded to you as soon as they are completed. Rain has held up survey field activities over the last two weeks.

Sincerely,

David Wilson

J. D. Wilson
Environmental Services
636-5925

Enclosure

WASTE MATERIALS

Latex Sludges -- Latexes are polymer or copolymer particles dispersed in water. They are important to industry primarily as binders and saturants. Examples are styrene-butadiene latexes and vinylidene chloride latexes.

Plastic Molding and Extrusion Materials -- Dow produces three major types of plastic molding and extrusion materials: styrene-containing, ethylene and chlorine-containing. In addition, extensive research and development activity is directed to new and unique polymers that can open new application opportunities for thermoplastics. Resins are designed for particular suitability to the broad range of commercial fabrication methods, including injection molding, sheet and film extrusion, thermoforming, blow molding, rotational casting and coextrusion. The Dow resins serve nearly all markets, with particular emphasis on packaging materials, appliances, furniture, and industrial parts. Examples are: TYRIL® (styrene - acrylonitrile copolymers), ABS (acrylonitrile - butadiene - styrene copolymers), and STYRON® (polystyrene polymers). Uses include injection molding, cups, lids, toys, furniture, automotive parts, appliances, etc..

Flocculants -- Dow flocculants are high-molecular-weight, synthetic, water-soluble polymers. The products span a broad range of molecular weights and include cationic, essentially nonionic, and anionic materials used for solid/liquid separations in water and wastewater treatment; and mining and paper process applications. Examples are: SEPARAN® and PURIFLOC® acrylamide polymers.

Packaging Products -- The Dow Chemical Company markets materials which are used by other manufacturers to contain, support, or protect their products. These packaging materials include clear films, coextruded films, and loose-fill packaging. An example is SARAN WRAP®, a vinylidene chloride - vinyl chloride copolymer film, used for industrial packaging, bakery products, and households.

Methylcellulose Product Residues -- METHOCEL® cellulose ether products are water-soluble gums having surface-active properties and selective organic solubility. The products are nonionic, are not metabolized, and possess unusual thermal-gel properties.

The products function as thickeners, suspending agents, dispersants, binders, film formers, water-retention aids, emulsion stabilizers, or impart a combination of these properties. Some products are used as food thickeners.

Ion Exchange Resins -- DOWEX® ion exchange resins are produced in four major types. Strong acid cation resins are capable of exchanging cations, or positively charged ions. For example, such resins will exchange sodium (Na) for calcium (Ca) and magnesium (Mg), as in water softening, or hydrogen (H+) for

calcium, magnesium, and sodium, as in "salt splitting". The weak acid cation resin is capable of exchanging positively charged metal cations associated with weak bases, such as bicarbonates, for hydrogen at near-stoichiometric regeneration use and does not split salts. The strong base anion resins are capable of exchanging anions, or negatively charged ions, and can split salts to bases. The weak base anion resins are capable of neutralizing acids. Combinations of cation and anion exchange resins can effectively demineralize water, recover wastes from process streams, and function as condensate polishers for nuclear and fossil-fuel power plants.

Foamed Product Residues -- STYROFOAM® polystyrene used for flotation for docks, rafts, insulation for residences, etc.

Ethylcellulose Residues -- ETHOCEL® ethylcellulose resins -- These products are used as gel lacquer coatings for bowling pins, generator field coils, and glass bottles; hot-melt strippable coatings and paper coatings; lacquers for paper coating, electrical insulation, strippable coatings, fabric coatings, bronzing, and alkali resistance lacquers. They are also employed as binders or viscosity modifiers for nitrocellulose lacquers, glass frits, delayed-release coatings, printing inks, varnishes, and pigment print pastes.

Inorganic Residues -- Examples:

Calcium chloride	- $CaCl_2$
Magnesium hydroxide	- $Mg(OH)_2$
Magnesium sulfate	- $Mg(SO_4)$
Potassium bromide	- KBr
Sodium bromide	- NaBr

Asbestos Insulation and Demolition Asbestos

FDA Products -- Salicylic acid residues, METHOCEL®, ETHOCEL®, SARAN WRAP®

Demolition Debris from Building Demolitions

Waste Treatment Sludges

Flyash - Cinders from Powerhouses

Incinerator Ash

Spill Yard Clean-up Solids